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Loose Stools in Infants

require extra diapering, and inconvenience the mother

Clinically, loose stools are accompanied by a dehydration which, when excessive or long continued, interferes with the baby's normal gain. A long-continued depletion of water is serious, since "the fluid requirements of an infant are tremendous. A normal infant 15 pounds in weight will frequently excrete as much as one litre of urine per day. A negative water balance for more than a very short period is incompatible with life." (Brown and Tisdall)

Moreover, when the condition is superimposed by chance infection, the delicate balance may be seriously upset, since the infant's reserves have already been drawn upon, so that resistance to infection and dangerous forms of diarrhea may be too low for safety. Every physician dreads diarrhea, which Holt and McIntosh call "the commonest ailment of infants in the summer months."

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VITAMINS IN CANNED FOODS

II. VITAMIN D

• One of the most interesting chapters in the history of the science of nutrition is that relating to vitamin D. It is a record of steady advances in our knowledge concerning the vitamin. Starting with the work of Huldschinsky in 1919 on the ultraviolet irradiation of rachitic children; passing to the classical discovery in 1924 by Steenbock (1) and by Hess (2) that irradiated foods may acquire antirachitic potency; and extending through the profound studies of Windaus (3) and other investigators, on the constitution of the pure vitamin D obtained by ultraviolet irradiation of ergosterol, the story of vitamin D is a story of steady, scientific progress.

As a result of these basic contributions, there are available today a number of excellent standardized carriers of vitamin D. Viosterol, and the fish liver oils, and their concentrates, are readily available for use in the campaign against rickets whose prevalence, especially among infants in large urban centers, still remains high. In addition to these vitamin D carriers, the vitamin D fortified or irradiated foods have appeared within recent years.

It has become increasingly evident that there are a number of compounds which may promote calcification in the various animal species. It is further evident that these compounds vary in their physiologic

efficiency with various animal species, or that they are "species specific". A number of forms of vitamin D have been postulated (4) and much research in the vitamin D field has been directed toward their isolation and identification.

In general, natural foods have never been regarded as important sources of vitamin D. The commonest food articles show extremely low antirachitic potencies when measured by conventional methods. However, recent evidence has been offered that the contribution of vitamin D made by a varied diet of canned foods may be more significant than has heretofore been supposed (5). While common foods admittedly cannot supply the high demands of infancy and childhood or other phases of the life cycle, for vitamin D, it would appear that they may supply significant amounts of the vitamin to the diet, especially in the case of the adult human, concerning whose quantitative vitamin D requirement comparatively little is known.

Biological research has shown that canned marine products such as salmon, shrimp, and oysters (6) make a small but definite contribution of the antirachitic factor to the diet. We desire to direct the attention of our readers to these interesting facts about canned foods in general, and these canned marine products in particular.

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- (1) 1924. J. Biol. Chem. 67, 405.
 (2) 1924. J. Biol. Chem. 67, 301.
 (3) 1932. Ann. 492, 228.
 (4) 1935. Physiological Reviews 15, 1-97.

- (5) 1924. Ind. Eng. Chem. 26, 758.
 (6) a. 1935. J. Home Econ. 27, 658.
 b. 1933. Science, 78, 368.
 c. 1926. Wis. Agr. Expt. Sta. Bul. 388, 124.

This is the fifteenth in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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* Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245
Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154
N. Y. State Jour. Med., June 1935, Vol. 35, No. 11

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* Martenstein, H.: Syphilis Treatment: Enquiry in Five Countries, *League of Nations Quart. Bull., Health Organ* 4:129, 1935.

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FIG. 1. Nov. 27. Nose in unshrunken state after 14 days of spraying twice daily with ephedrine, 1% in oil. Mucosa engorged, bluish, turgid and irritated; inferior turbinate blocking nostril. Marked tolerance to treatment had developed.

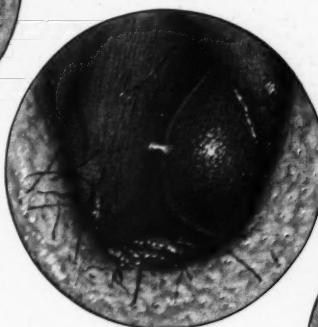


FIG. 2. Dec. 13. Nose in unshrunken state after 16 days treatment with Benzedrine Inhaler, three times daily. Engorgement reduced, tone good, irritation relieved. Note absence of atony.

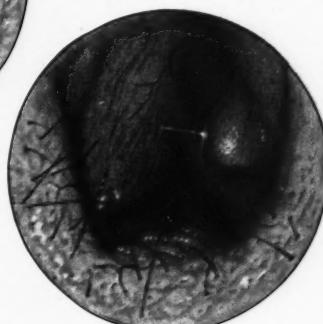


FIG. 3. Dec. 13. Nose in shrunken state seven minutes after application of Benzedrine Inhaler. High degree of shrinkage indicates no tolerance even after continued use.



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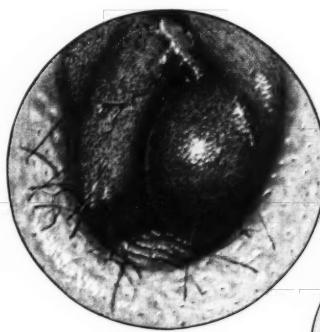


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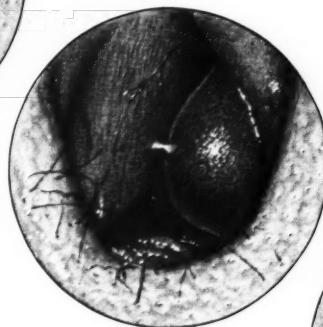


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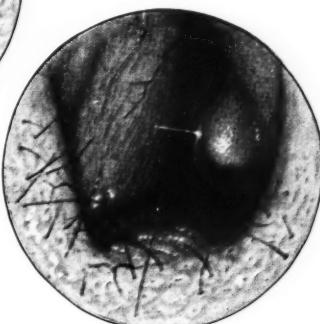


FIG. 3. Dec. 13. Nose in shrunken state seven minutes after application of Benzedrine Inhaler. High degree of shrinkage indicates no tolerance even after continued use.



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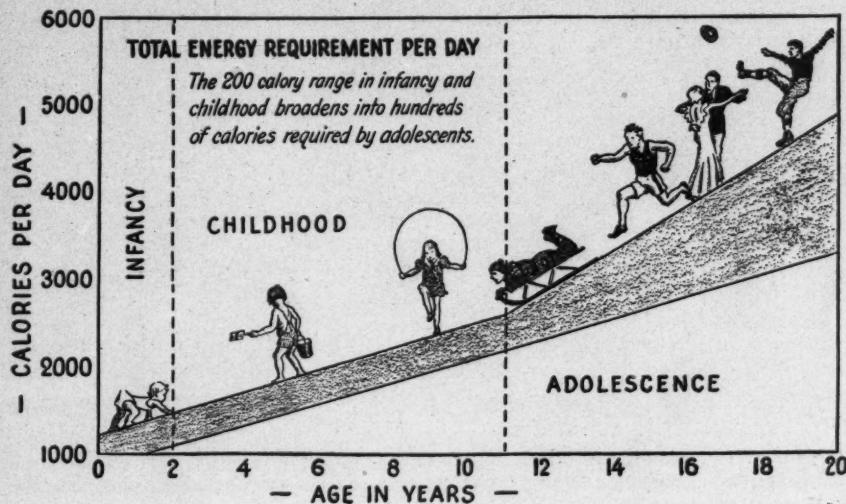
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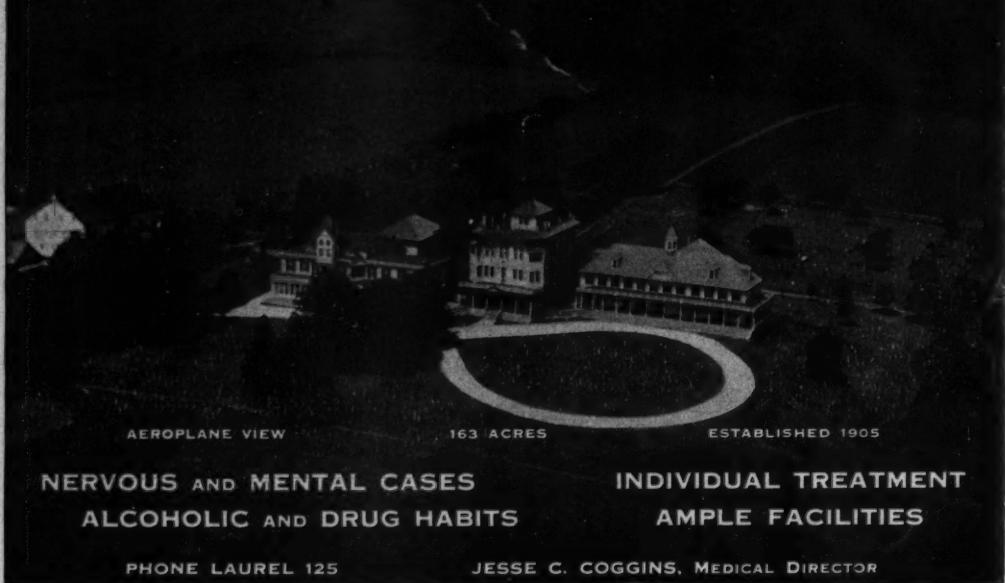
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AUGUST, 1936

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DELAWARE AND THE U. S. REGISTRATION AREA

ARTHUR C. JOST, M. D.,*

Dover, Del.

There are three measuring rods in ordinary statistical use which are commonly employed to determine the public health standing of a community, to assess the value of the public health work being carried on, or for purposes of comparison. These measuring rods are the general death rate, the infant mortality rate, and that specific death rate which indicates the losses from tuberculosis.

Other rates are very frequently used for other particular purposes, but it seems difficult to imagine conditions under which, these statistical measurements being favorable, it will not be found that measurable progress has been made in most, if not all, of the fields of public health effort. As at present constituted, there are few health organizations which have not equipped themselves to wage warfare against the conditions which tend towards the increase of these rates, and improvement measured by a continual reduction is the aim, as it usually is the result, of the programs which the health organizations have adopted. To the theoretical objection that there must come a time when these have been brought to an irreducible minimum, it can only be said that surely in this state, and even as well in those states where the natural conditions are such as to be still more favorable than here, there are few individuals who would be willing to assert that the limits of improvement have been reached. There are everywhere goals of attainment not yet reached—goals which may continue for many years to be unattained or unattainable.

General Death Rate:

This rate, indicating the number of indi-

viduals dying each year in one thousand of population—and often referred to as the crude rate as opposed to a standardized or corrected rate—is possibly one of the three most apt to be affected by conditions which may not appear in the calculation. Populations differ widely in respect of many characteristics and each difference in essential characteristics may have a very decided, though perhaps hidden, effect on the height of the rate. It is the one which, so far as the state of Delaware is concerned, is the most unfavorable. It has been so for years. In all probability it will continue to be so for years to come. Of all the states of the Union, the Delaware crude rate has been one of the highest, and the one which from year to year has varied least. It is only of recent years that there has been any tendency for the rate to fall. It will be seen that over a period of years it has maintained itself in about the same relative situation in comparison with the rate of the U. S. Registration Area, showing little tendency towards a reduction greater in amount than is that of the larger area.

GENERAL DEATH RATES

(Rates per 1,000)

U. S. Registration

Year	Area	Delaware
1920	13.0	15.7
1921	11.8	14.3
1922	11.7	14.5
1923	12.2	15.1
1924	11.7	14.2
1925	11.8	14.5
1926	12.3	15.9
1927	11.4	13.8
1928	12.1	13.6
1929	11.9	13.2
1930	11.3	13.6
1931	11.1	13.8
1932	10.9	12.9
1933	10.7	13.3
1934	11.0	13.3

There are at least two reasons for the height of the Delaware rate and its relative immobil-

*Executive Secretary, Delaware State Board of Health.

ity over a period of years. The more potent of the two is the adverse population composition which is so easily apparent in the census returns. Any community which has for a considerable period of time lost for one reason or another an undue proportion of that part of its population whose ages are between the early teens and middle age, must of necessity soon find itself overpopulated in respect of persons in the age groups still greater. That is one of the characteristics of the population of the state, a characteristic becoming more prominent with each succeeding census. When the census of 1920 was taken, the number of persons in Delaware aged forty-five and over represented 22 per cent of its population. In 1930 the per cent had become 26, and the end of the movement may not yet have been reached. It is the white population of the state which especially shows this characteristic. For example, in 1930 the per cent of white population of age 50 and over was 21.8 per cent of the whole; the corresponding per cent of the colored was 16.9.

It is possible by the use of the calculation followed in the standardization of a death rate to estimate that portion of a crude death rate which owes its causation to such an unfavorable population composition.

STANDARDIZATION OF DEATH RATE

Ages	Population of Delaware—1930	U. S. Death Rates—1911	Computed Deaths
1	3,705	112.9	418
1- 4	15,589	11.8	183
5- 9	22,334	3.1	69
10-14	22,027	2.2	49
15-19	21,186	3.6	76
20-24	20,134	5.2	104
25-34	36,119	6.4	231
35-44	34,211	8.9	304
45-54	27,176	13.6	369
55-64	18,613	26.2	487
65-74	11,738	55.2	647
75 and over	4,948	138.9	687
	238,380		3,624

(Population of unknown ages has been added pro rata to the age groups)

It will be seen that applying the death rates by age groups of the 1911 Registration Area to the population figures of the state of Delaware results in a total of 3,624 computed

deaths which would have occurred at those rates of mortality in the state. This is equivalent to a rate per thousand of 15.2. But, in the Registration Area as a whole, the same mortality rates by age groups resulted only in the death rate of 13.9 for the whole population. The fraction, therefore, which results from the division of 13.9 by 15.2 (which is .914), indicates the extent of disability under which the state labored in comparison with that particular population selected as a standard, due in no way to any current of mortality (since this was the same in both instances), but only to the difference in population composition. This fraction has therefore been called a factor of correction, which may be applied to the crude rate of Delaware in order to equalize, as between the state and the area selected as the standard, the adverse effect due wholly to population differences.

DELAWARE DEATH RATES

Crude and Standardized

Year	Crude Rate	Standardized
1920	15.7	14.3
1921	14.3	13.0
1922	14.5	13.2
1923	15.1	13.8
1924	14.2	12.9
1925	14.5	13.2
1926	15.9	14.5
1927	13.8	12.6
1928	13.6	12.4
1929	13.2	12.0
1930	13.6	12.4
1931	13.8	12.6
1932	12.9	11.7
1933	13.3	12.1
1934	13.3	12.1

The second reason for the height of the Delaware rate is racial. The proportion of colored population in the state quite largely exceeds the proportion present in the larger unit, and on this account affects to a much greater extent the Delaware figures. The rates of loss of the colored have quite consistently exceeded that of the white population over a period of years by more than fifty per cent. It is inescapable that a rate so high for a section of the population so large must seriously affect the state totals.

DELAWARE GENERAL DEATH RATES

Year	White	Colored
1920	13.4	22.0
1921	12.2	19.7
1922	12.2	19.9
1923	13.1	21.0
1924	11.8	21.2
1925	12.4	20.3
1926	13.7	21.9
1927	11.9	19.0
1928	12.8	18.7
1929	12.1	20.2
1930	12.4	21.8
1931	12.6	21.4
1932	11.9	19.0
1933	12.4	19.5
1934	12.1	20.7

It will be seen that standardizing the white rate for 1934 (12.1), by multiplying it by the factor of correction and so counteracting the effect of adverse population differences, results in a total exactly equal to the crude rate of the larger area (11.0).

INFANT MORTALITY

The rate of infant losses is the second of the triad which is of value in the endeavor to evaluate the progress which health effort is making. The rate indicates the number of infants dying each year out of each thousand born alive. Of all the rates, it is the one most easily altered by the use of those health measures which we expect both in theory and practice to bring about improvement. The rapid reduction of the rate is a striking feature of present day experience, and, though of recent years, so far as the Registration Area is concerned, the yearly reductions are not so great as were experienced some years ago, we have by no means reached a static figure, or one as favorable as has been attained in a number of communities. When our rate shall have dropped approximately to two-thirds of what it at present is, we shall be nearing the attainment of a goal apparently quite within our reach.

INFANT MORTALITY RATES

U. S. A. and Delaware

Year	U. S. Registration Area			Delaware		
	White	Colored	White & Colored	White	Colored	White & Colored
1920	82	132	86	106	232	122
1921	72	108	76	89	169	99
1922	73	110	76	88	190	101
1923	73	117	77	90	190	104
1924	67	113	71	75	185	91
1925	68	111	72	76	163	90
1926	70	110	73	77	176	92
1927	61	100	65	63	99	71
1928	64	106	69	69	126	78
1929	63	102	68	71	133	81
1930	60	102	65	69	120	78
1931	57	96	62	60	159	84
1932	53	86	58	63	94	68
1933	53	91	58	53	85	58
1934	55	94	60	51	101	60

It will be seen that, though there was a difference of nearly fifty per cent as between the Registration Area and the state at the first of the period covered by the table, the rate of the state being very unfavorable in the comparison, the improvement made during the later years of the period have been such as to have equalized the figures.

The table shows quite plainly, too, the effect of the high rate of the colored on the combined rate for the state. Moreover, since the proportion of colored infant deaths in Delaware is greater than it is in the Area, a lower rate for the colored must be obtained in the state than in the Area in order to show as low a combined rate. For example, in the year 1933 the Delaware rate for white infants was the same as for infants in the larger unit, and the combined rate was also the same. It was possible only because there was in the state that year a rate of loss of colored infants lower by six points than was the Area rate.

It is but to be expected that the smaller group would show greater irregularity, and not only that, but periods of rather spasmodic improvement after several years during which any ground gained appeared to have been held only with difficulty. The rate of 60 for the state during the year 1934 resulted from 240 deaths in 4,021 live births. In 1929 the number of infant deaths was 590, so that in the later year the saving of nearly one life a day had been brought about. It would appear to be possible to diminish the loss by nearly a third. The improvement which has taken place has almost entirely been the result of there having been fewer deaths from infec-

tions, from infant diarrhea, from respiratory diseases, such as bronchitis, broncho-pneumonia and pneumonia, and from debility. These are all subject to additional attack, and we have by no means reached our limits of improvement.

TUBERCULOSIS MORTALITY RATE

An examination of the rates of the state and the Registration Area shows that the state has occupied an unfavorable position for many years. It is also to be seen that there has been marked improvement in both areas. The Registration Area in fourteen years has exactly halved its rate. The state has done better. Exceeding by thirty-one points the Area rate in 1920, there is but a difference of eight at the end of the period. The annual increment of improvement in respect of the Registration Area for the period from 1921 to 1933 is 3.2 points; for the state the similar figure is 5.1. The state, therefore, for the past fourteen years has made more rapid reduction of its tuberculosis losses than has the Area, and if improvement for a few more years at the same relative speeds continues, the rate for the state should soon be lower than that of the Area. There were fourteen states in 1934 with rates higher than was that of Delaware.

TUBERCULOSIS—ALL FORMS

U. S. A. and Delaware Rates

(Rates per 100,000 of population)

Year	U. S. A.	Delaware
1920	114	145
1921	99	137
1922	96	118
1923	93	114
1924	90	114
1925	87	100
1926	87	109
1927	81	96
1928	79	82
1929	76	81
1930	72	69
1931	68	87
1932	63	67
1933	60	73
1934	57	65

This is the more satisfactory since there has not yet been available in the state the full equipment of protection which is needed. The completion of the hospital now under con-

struction ought, fairly well, to supply the needed provision for hospital treatment for the whites of the state's population. The needs for the colored, however, are still far from being met. Our full requirements in this particular having been obtained, we can very confidently predict improvement and a rapid progress towards tuberculosis control.

That the rate of improvement among the colored has not been as rapid as it has been among the whites is quite apparent if the rates by races are compared.

TUBERCULOSIS BY RACE Delaware 1920-1934

Year	White	Colored
1920	117	317
1921	108	327
1922	85	331
1923	87	280
1924	88	284
1925	74	260
1926	85	258
1927	70	253
1928	64	189
1929	66	179
1930	50	186
1931	65	225
1932	51	178
1933	55	187
1934	46	173

This table indicates approximately 60 per cent improvement in respect of the whites, while the improvement among the colored is about 45 per cent. The rate 117 of the year 1920 signified 226 deaths of whites in the state. In 1934 the rate 46 resulted from 99 deaths.

It is but to be expected that in a unit of population so small as is the state there would be quite marked degrees of irregularity, in any series of figures which extends over a period of years, an irregularity which tends to be smoothed out in the showing of more populous units. An entirely orderly and regular improvement can hardly be expected. Trends, if definite over periods of a sufficient number of years, are more trustworthy than isolated figures, and these, in respect of all the indices considered, indicate that there has been a quite measurable, if not entirely satisfactory improvement over a period of years in the state.

A TEN YEAR SUMMARY OF THE DISCHARGED CASES FROM THE BRANDYWINE SANATORIUM

L. D. PHILLIPS, M. D.,*

Marshallton, Del.

About ten years ago the State assumed the responsibility of operating the Brandywine Sanatorium. It is felt at this time that a summary of the present status of the discharged cases during this ten-year period may be of some interest.

It is generally known that the Sanatorium admits only cases of tuberculosis or tuberculous suspects for a limited period of observation, until a definite diagnosis can be obtained. All stages of the disease are admitted, including the hopeless terminal cases.

Even though some of the cases on admission are far advanced and hopeless, we believe by their confinement in the Sanatorium the danger of their further infecting the community is lessened. Therefore, it is a question as to which is the better for the future health of the state: to admit only favorable cases who will respond to treatment, or far advanced positive sputum cases who are probably hopeless but who are spreading the disease. After some thought, the State Board of Health ruled that all cases shall be admitted in order of their application regardless of the stage of the disease.

The following table summarizes the admissions and discharges of these patients for year during the past ten years:

ADMISSIONS AND DISCHARGES—10 YEARS

Year	No. of Adm.	Less than 3 Mos.			Dis. Total		
		Improved	Un-improved	Stay			
1926	82	24	10	3	12	25	74
1927	82	42	9	11	7	20	89
1928	88	37	7	5	7	23	79
1929	92	27	15	9	7	29	87
1930	117	39	16	7	20	17	99
1931	91	36	10	7	11	17	81
1932	61	20	11	6	4	15	56
1933	79	34	10	3	4	18	69
1934	77	30	12	3	2	10	57
1935	77	32	5	8	1	17	63
Totals	846	321	105	62	75	191	754

The following table is a summary of all tuberculous patients discharged from the Sanatorium in relation to their length of stay in the Sanatorium:

LENGTH OF STAY IN SANATORIUM

Discharge Diagnosis	Under 1 Mo.	1-2 Mos.	2-3 Mos.	3-6 Mos.	6-12 Mos.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.	Total
Improved	—	1	22	107	79	74	27	10	1	—	321
Unimproved	59	32	11	29	24	10	1	1	—	—	167
Died	43	23	21	27	35	21	11	2	4	4	191
TOTAL	99	55	53	161	136	104	39	13	5	4	669

One will note from the above tables that during the past ten years there have been 754 cases discharged from the Sanatorium. Of these discharged cases 321 were discharged improved, 167 were unimproved (the majority left the Sanatorium against advice, 62 of whom left under three months following admission), and 191 died in the Sanatorium. Included in the above table are 61 children, all fourteen years of age or under.

The following is a tabulation of these 61 children with relation to admission and discharge diagnosis:

CHILDREN (UNDER 14 YEARS OF AGE)

Admission Diagnosis	Un-Improved				Died	Non-T. T.	Total
	Improved	Improved	Moderately Advanced	Moderately Advanced			
Advanced	—	—	1	1	—	—	2
Moderately Advanced	1	—	—	—	—	—	1
Minimal	7	—	—	—	—	—	7
Extra-Pulmonary ..	3	1	—	—	1	—	5
Childhood	29	—	—	—	—	—	29
Observation	—	—	—	—	17	17	17
Total	40	2	2	17	—	—	61

It will take years of thorough follow-up work on children discharged as having been improved of childhood type, pulmonary tuberculosis, to determine whether they as readily develop the adult pulmonary type as the other infected children who have not received any institutional care.

The following table is a summary of the patients who were discharged improved in relation to their present state of health. These figures do not total 321 as re-admissions are not included (quite a few were re-admitted for only a few days for surgical treatment), nor did we include any patient whose stay in the Sanatorium was under three months. Even though there may have been a slight improvement, it is felt that definite lasting benefits from the treatment of tuberculosis cannot be obtained under at least a three months' period.

*Director, Brandywine Sanatorium.

**PRESENT STATE OF PATIENTS DISCHARGED
AS IMPROVED**

Admission Diagnosis	Well	Not Well	Dead	Untraced	Total
Advanced	12	8	25	6	51
Moderately Advanced	60	12	25	8	105
Minimal	31	1	1*	—	33
Childhood	19	1	1	—	21
Serous Membranes	4	—	—	—	4
T. B. Bones	1	1	—	1	3
Total	127	23	52	15	217

*Died of Lymphatic Leukemia.

The term "well" in the above table includes those patients whose sputum for the tubercle bacilli is negative, who have no toxic symptoms significant of an active process, and whose x-ray films show stable lesions. Listed under "not well" are those of reverse; positive sputum, toxic symptoms, or unstable lesions appearing on x-ray films. The vast majority of the cases who were discharged unimproved are either dead or listed as "not well," except in a very few instances.

Nine of the twelve patients listed as "well," having advanced lesions on admission, received surgical treatment.

The following table shows the number of patients on whom some form of surgical interference was attempted. The disease in all of these cases was considered advanced to the stage that routine sanatorium treatment alone would not give sufficient rest of the disease for improvement. Most of these cases showed on x-ray films open cavities and practically all had definitely positive sputums.

SURGICAL INTERFERENCE

	Well	Not Well	Dead	Total
Satisfactory Collapse	35	7	4	46
Unsatisfactory Collapse	3	13	46	62

From the table it will be noted that the figure is quite high for the cases in whom a satisfactory collapse could not be obtained and are tabulated as unsatisfactory. This is explained by the fact that these figures include every patient on whom any attempt at surgical interference was made, even the terminal cases in whom it was felt that artificial pneumothorax, etc., would not be successful. However, attempts were made in this type of case in the hope that a small per cent could be improved.

The following table is a combined summary of the deaths in the Sanatorium for the past

ten years in relation to their length of stay in the Sanatorium:

DEATHS IN SANATORIUM

Diagnosis on Admission	Under 1 Mo.	1-2 Mos.	2-3 Mos.	3-6 Mos.	6-12 Mos.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5 Yrs.	Total
Advanced	42	23	21	22	27	19	7	2	1	3	167
Moderately Advanced	—	—	—	5	6	2	4	—	2	1	20
Extra-Pulmonary Observation	1	—	—	—	—	—	—	—	1	—	2
Total	43	23	21	27	35	21	11	2	4	4	191

From this table one will note that of these deaths, 87 or approximately 45 per cent of the total number of deaths died within three months after admission. Forty-three, or 22 per cent, died in less than one month following admission and a high percentage of these patients died within a week following admission.

From the foregoing one may draw the following conclusions:

- 1—The earlier treatment is instituted, the more favorable the prognosis.
- 2—If a satisfactory collapse is obtained of the extensive lesions which cannot be improved by routine bed rest, the prognosis is favorable.

**MATERNAL AND CHILD HEALTH
PROGRAM AIMS TO AUGMENT
PRIVATE PRACTICE**

WOODBRIIDGE E. MORRIS, M. D.,*

Dover, Del.

Immense benefit over coming years will accrue to the medical men of Delaware through the maternal and child health program now in process of development by the State Board of Health.

The five-year goal is a reduction of maternal mortality from about 70 per 10,000 live births to 35, a reduction of infant mortality from about 60 per 1,000 live births to 30. Specific aims follow:

1. Public education as to:
 - a. Basic nutrition facts
 - b. Essentials of prenatal care
 - c. Adequate home preparation for delivery

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- d. Infant care
 - e. Problems of the child from 1 to 6
 - f. Maintaining the health of school children
2. Opportunities for post-graduate medical education in :
- A. Obstetrics:
 - a. The management of delivery in the home
 - b. The management of eclampsia
 - c. Post-partum problems
 - B. Pediatrics:
 - a. Neo-natal emergencies
 - b. Infant feeding

Such a program is possible only through Federal funds now available to Delaware by the Social Security Act of 1935. They are administered under the direction of the Children's Bureau, U. S. Department of Labor.

INCREASED HEALTH WORK POSSIBLE

The "contact men" of the health department are the public health nurses and dental hygienists. Their principal duty with mothers and children is to supply health information for well persons, to help sick persons, and to get them under the care of a physician or dentist.

Serutiny of conditions in the field reveals that the two weakest links in the chain supporting Delaware's maternal and child health are nutrition, and prenatal care. Accordingly, nurses and hygienists of the State Board of Health have taken a special course in each of these subjects, and are equipped to recognize the problems in each field, and to deal with the non-medical ones.

In nutrition, the effort this coming year will be to convince the public of Delaware of the importance and economy of including in diet the four protective food groups: milk, eggs, fruit, and green vegetables.

Inasmuch as statistics from Kent County show a slightly higher mortality rate in communicable diseases, a nutrition demonstration will be undertaken here under the direction of the state nutritionist. This will be carried on in health centers, schools, clubs, and all community groups in co-operation with the various private and state agencies administering the groups' activities.

Prenatal care, ideally, should be available to every pregnant woman in Delaware. Statistics are not available to show what percentage of pregnant women receive this care at the present time. But our mortality statistics indicate that conditions in Delaware are no better than elsewhere in the United States. Our maternal death rate per 10,000 live births was 63 in 1935. Analysis of each death indicates that at least half of these lives could have been saved by adequate prenatal, obstetrical, and post-partum care.

The nurses are embarking upon an endeavor to find that class of prenatal case which has hitherto gone through pregnancy unattended. Their objectives are to find the pregnant woman early, to convince her and her husband of the importance of medical attention during pregnancy, and to arrange such attention in every case found. Also, of course, the nurse herself warns the mother of the danger signals of pregnancy, sees to it that the home is prepared for emergencies and for delivery, and educates the parents in the fundamentals of "having a baby."

MIDWIVES CLOSELY SUPERVISED

The largest single phase of this problem is midwifery. Approximately 20 per cent of the deliveries in Delaware are attended by midwives. These women are often appallingly ignorant of everything pertaining to obstetrics. They are licensed by the State Board of Health so that they may be called together every quarter for instruction, and so that the public health nurse may inspect their bags and equipment monthly. They are required to be familiar with fundamental rules of safety, including hand-scrubbing, refraining from entry into the birth canal, refraining from administration of drugs, and summoning a physician for "anything unusual about the case." A list of the names, addresses and telephone numbers of all physicians in their county is furnished them. They are advised to have every case registered with them for delivery consult a physician at least once during pregnancy for an examination of heart, lungs, blood pressure, urine, and pelvimetry.

Each midwife is required to report to the public health nurse the name and address of all cases for the delivery of which she is en-

gaged. This is estimated at half the total mid-wife deliveries. The nurse then visits the home to perform the prenatal visit outlined in the nurse's procedures. She seeks particularly to reinforce the importance of a medical prenatal visit.

GREATER CARE PROJECTED FOR CHILDREN

The child from 1 to 6 has been regrettably neglected hitherto in the public health program. To be sure, well baby clinics are maintained through the state where babies are weighed and measured and mothers are given advice as to food and clothing. The great majority of mothers of Delaware have not taken full advantage of this service. A result is that a lamentable number of children are brought in at pre-school examinations each spring with defective skin, eyes, ears, teeth, tonsils, hearts, hernias, and with a needlessly high percentage of evidence of malnutrition.

The birth certificates of a large proportion of children in Delaware are delivered in person by the nurse. In the future, it should be possible to follow up this visit with periodic visits at specific ages, when discussion with the mother will turn upon prevention of the ailments listed above, and upon the advantage of early correction. Evidently, this system should eventually make unnecessary summer round-ups of pre-school children, and the doctors and dentists of Delaware should find an increased flow to their offices of children in this age group. Such visits should make for a higher standard of community health through closer and more frequent contact between patient and physician.

Physical examinations in schools have for lack of "man power" hitherto been merely inspections. Parents are indignant concerning this state of affairs. Federal funds are now available for the payment of a physician for assisting county medical officers at each larger school. He will be paid a fee for each half day's services. These services will consist of a complete physical examination. The county health officer will thus be provided time to perform a complete physical examination himself. Defects found will, as always, be called to the attention of the parent, with the recommendation that the parent consult the family physician to arrange correction.

This again should react directly to the benefit of both child, parent, and physician. There should be fewer sick children. The death of a school child from disease should be rare indeed. All physicians of each community should find an increased number of little patients coming to him early, an important item of medical revenue hitherto inadequately approached.

"REFRESHER COURSES" ARE PLANNED

With the demands of private practice in Delaware, it has been difficult for many of the physicians of the state to keep up as they would wish with modern practices in obstetrics and pediatrics. The physicians who do keep up are noted for this in their communities.

Doctor Joseph B. DeLee of Chicago, at present one of the country's outstanding obstetricians, has had prepared a large number of educational obstetrical films. These are unfortunately limited in their value to the general practitioner, inasmuch as they deal only with hospital obstetrics. However, 19 of these have been purchased by the State Board of Health and will be shown from time to time throughout the state to medical groups during the coming year. They deal with the mechanism of labor, forceps, eclampsia, the treatment of breech presentation, complications of the second stage, post-partum hemorrhage, and the treatment of asphyxia neonatorum. In addition to these, in conjunction where possible, review lectures will be arranged on topics of practical obstetrical management.

Half the infant deaths of Delaware, as of the United States, occur during the first two weeks of life. The mortality in this neonatal period has been lessened but little during the past 30 years. Our immense statistical reduction of infant mortality is found in the age groups between one and twelve months.

Refresher courses, therefore, will be arranged to offer physicians information concerning the obstetrical problems of the newborn period, and the special techniques required for dealing with them. In this connection, it should be possible to arrange as well for a brief review presentation of the modern knowledge and practice of infant feeding.

SYPHILIS CONTROL IN DELAWARE

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The control of syphilis and its ultimate eradication is the next great problem confronting physicians. No public health program for this work can meet with success unless the practicing physicians of the state are whole-heartedly behind and in sympathy with it. Private physicians should and rightly so occupy the stellar roles, for they are the ones who see early syphilis.

The Delaware State Board of Health, however, with the purpose of aiding and assisting physicians, has been and is interested in syphilis control. Shortly after the World War a state clinic was started in Wilmington. This work was taken over by Wilmington hospital clinics in 1923. A clinic was started in Dover in 1923 which has continued to the present time. In November, 1934, a clinic was started in Georgetown.

Delaware has had a Venereal Disease law since 1919. It was not until 1930, however, when the report of the Special Committee on Syphilis¹ was read at the annual meeting of the Medical Society of Delaware that much interest in the reporting of syphilis was aroused. Each year there has been improvement in the reporting of cases. However, a brief glance at the figures for the past three years is rather illuminating.

	1933	1934	1935
Number of Physicians reporting Syphilis	17	11	18
Number of cases reported by Physicians	48	69	81
Number of cases reported by Clinics and Physicians	273	618	533
New cases reported by B. of H. to USPHS (physicians, clinic and laboratory reports: known duplication omitted)	1425	1636	1721
Average monthly incidence 5.8 per 10,000 population for 1935			

The new American Medical Association medical directory lists 316 physicians in Delaware, 187 of whom are in Wilmington. Of course a few of those listed are not in practice; however, it is safe to say that less than 7 per cent of the doctors in the State are reporting syphilis. One reason for this may be that some physicians think that sending in blood for the Wassermann tests obviates

reporting. This is not correct; while the laboratory keeps a record of all new Wassermann tests sent in, if a second sample from the same patient is sent in under a different name or number, duplication is bound to occur. In the past 2 years 158 physicians of the state have sent blood specimens for Wassermann tests to the state laboratory.

The objectives which Parran gives for syphilis control in New York state² are well worth adoption for Delaware. They are as follows:

- a. Provision for adequate diagnosis and treatment facilities;
- b. Improvement in case reporting and the supervision of syphilis cases;
- c. Intensive and complete investigation of syphilis cases and contacts;
- d. Professional and public education in matters pertaining to social hygiene.

Considering the application of these objectives to Delaware, adequate diagnosis of early cases of syphilis is a responsibility of the physicians of the state. The report of the Committee on Syphilis of the Medical Society of Delaware stated last year³:

"When all of us learn to respect the early penile sore, refraining from and cautioning the patient against the application of any powder, ointment, caustic or solution other than normal salt solution, until a microscopic examination (including dark-field, smear, and often tissue section) has been made, then only will we see a great reduction in the number of cases of syphilis reaching secondary and later stages. Early cures would cease to be a rarity."

There are four hospitals in Wilmington performing Wassermann tests in addition to the laboratory of the State Board of Health. No charge is made for any laboratory work done by the State Board of Health. Keidel tubes and mailing kits are furnished physicians on request. Mailing kits for deferred examination of serum for dark-field diagnosis are now available without charge at the State Board of Health laboratory. The kit consists of glass capillary tubes, a small amount of wax for sealing capillary tubes, a corked test tube container, mailing case and instructions.

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"Riehl in 1919 and coincidentally Schereschewsky, using glass capillary pipettes sealed by fusing in a flame, first demonstrated the practicability of this method. Riehl found recognizable spirochaeta pallida as long as 14 days after collection. W. R. Stokes and Leroy Ewing in 1926 described an outfit for physicians to collect serum for dark-field examinations."⁴ Dark-field diagnosis by mail is practical, and should be made more use of by physicians who do not have dark-field microscopes of their own.

The following venereal disease clinics are held in Delaware:

WILMINGTON: (Delaware Hospital) Tuesday and Saturday, 9 to 10 a. m.; Thursday, 5:30 to 6:30 p. m.; (Homeopathic Hospital) Friday, 1 to 2 p. m.; (Wilmington General Hospital) Friday, 3:30 to 4:30 p. m.; (St. Francis Hospital) Tuesday, 3 to 4 p. m.

DOVER: (Kent County Clinic) Monday, 2 to 4 p. m.; Wednesday, 7 to 9 p. m. (white only).

GEOGETOWN: (Sussex County Clinic) Tuesday, 2 to 4 p. m.

The State Board of Health furnishes arsenicals and bismuth to the four Wilmington hospital clinics and conducts the Dover and Georgetown clinics. In the latter clinics patients are treated who are referred by a practicing physician. Patients not referred by physicians are diagnosed for venereal disease and given emergency treatment, if found to be infectious. All potentially infectious and late non-infectious cases are given refer cards to be signed by a physician before their next clinic attendance. An effort is made to send the patients back to their physicians, from time to time, so that contact is not lost between the family physician and patient.

In 1935, 4,792 doses of neo-arsphenamine and 4,625 doses of mercury and bismuth were given by the hospitals and Board of Health clinics.

Free arsenicals and bismuth are furnished physicians for indigent cases. It is hoped in the near future that free arsenicals and bismuth will be available to physicians for all cases. The Executive Secretary of the State Board of Health is authorized to make arrangements for the payment of physicians

undertaking the treatment of indigent venereal disease patients under the following conditions:

1. The case shall have been reported in accordance with the Statute.
2. Permission to treat the case on the charge of the State Board of Health shall be asked for and obtained.
3. The preference of the practitioner respecting medical preparation to be used (arsenic, mercury, bismuth, etc.) shall have been expressed.
4. Record of treatments given shall have been noted on the case report card obtained from the State Board of Health, together with reports of laboratory examinations.
5. On presentation of the account accompanied by the above referred to case report card showing dates, quantities and form of treatment, payment is authorized on the scale below indicated.

Intravenous injections	\$1.00
Intra-muscular injections50
Urethritis treatments50

(Including Medicines)

6. If, after the completion of one course of anti-syphilitic treatment and the payment thereof, it becomes desirable to give more treatments, the case report card will on request be returned to the practitioner with the authorization for the continuation of treatment.

A venereal disease social service followup nurse, for the four Wilmington clinics, has been made available through the United States Public Health Service by the Social Security Act. One nurse in Kent County and one in Sussex County spend part of their time in this work, and are paid from the same source.

Case reporting was mentioned previously. Improvement depends upon the practicing physicians themselves, and their co-operation and help is sought by the State Board of Health. Physicians should realize that syphilis is a communicable disease and should be reported with as much promptness as scarlet fever, diphtheria, or smallpox. Many physi-

cians fail to report cases because they do not want the cases investigated, yet investigations should be made as to the source of the infection and subsequent contacts of the patient. This should be done by the physician. If he does not care to investigate contacts or does not have the time, then the Board of Health will be glad to tactfully assist him and see that contacts are referred to physicians for examination and treatment.

The State Board of Health can legally compel infectious individuals to take treatment.

Intensive and complete investigation of syphilis cases is being attempted in the clinics and is meeting with considerable success. Pamphlets on The Management of Syphilis in General Practice⁵, by J. E. Moore et al., are available to physicians requesting them, as well as literature to be given by the physician to new patients. Motion pictures are available for male and female audiences. The Board of Health will furnish speakers for public lectures to selected groups.

With the increasing interest of physicians in venereal disease control, and with the improved facilities of the State Board of Health, much will be done to limit the spread of syphilis.

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CHILD DEFECTS AND THE PHYSICIAN

FLOYD I. HUDSON, M. D.*

Rehoboth, Delaware

Many physicians have inquired, recently, as to the advisability of physically examining large numbers of school and pre-school children. Some have advanced the thought that only those children who are definitely retarded mentally should be examined. It is well understood, by all, that physical defects can and do retard proper mental and social development in persons of any age. It therefore appears logical that the prevention of the retardation is preferable to correction

after a child has been allowed to repeat grades in school. It is for this reason that large numbers, especially those beginning school, are examined thoroughly.

The policy of annually examining school and pre-school children in rural Delaware is of long standing. This work has been sponsored by the State Board of Health in co-operation with the Department of Public Instruction for many years. The examinations have been made by the health officers in their respective counties with the assistance of the nursing and dental hygiene staffs.

These examinations have two distinct purposes. The primary objective is educational. We attempt to build up a proper attitude toward health in each locality we visit. The idea that the physician is an instrument only for the treatment of disease is corrected as best we can. The importance of visits to the family physician for a periodic physical examination is stressed to the child and parents. In many instances, an attitude of fear as far as physicians and dentists are concerned is broken down. The second objective is to detect physical defects in the child. The vision, hearing, skin, scalp, teeth, tonsils, heart and lungs are examined. Many defects of which the parent is ignorant are found. Any abnormality which could possibly hinder proper physical or mental development is noted. Individual record cards are made for each case. These cards are filed permanently when the child finishes school.

The parents or guardians of children found to have defects are urged to go to their family physician or dentist for corrections. Many parents have taken our advice and have done so. Many have refused to attend to the defects for various reasons. Indifference, due to lack of knowledge as to the actual importance of the abnormality, is one of the prime factors which cause corrections not to be made promptly. It is here that the nursing staff can be of marked assistance in following up cases and re-urging immediate attention by the family physician. Due to enlarged nursing facilities in the county health units, this work will be carried on more extensively in the future. In many instances, the financial condition of a family is such that corrections of

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defects are impossible without aid. Where a family is financially able the corrections are usually taken care of without much follow up work.

The indigent family is another problem. Children with defects in these families have been assisted as far as possible by the local Parent-Teacher Association funds. Service clubs interested in the work provide for some. Physicians in many localities render services to these people free of charge. It is seldom that local care cannot be provided for any urgent case.

Many defects recorded are of a minor nature and are easily corrected. Conditions such as scabies, pediculosis capitis and teeth which need a dental cleaning are found. We do not consider our diagnosis as absolute. Many conditions which we consider defective may seem satisfactory to the family physician or dentist. Any physician or dentist who has had intimate contact with a case is certainly better equipped to pass a critical opinion on that case than is a person who makes one hurried examination. The private practitioner's word is final in any instance.

These school and pre-school examinations should send a large number of patients to physicians and dentists throughout the state. This gives the doctor an opportunity to do a great deal for the health of Delaware by educating as well as treating his patients.

The staffs of the county health units will gladly welcome any criticism of these programs. Only through such criticism can we know how to plan to be of greater service to the physicians, dentists and people of the state.

THE RELATION OF THE COUNTY HEALTH UNIT TO THE SCHOOL HEALTH PROGRAM

ERNEST F. SMITH, M. D.*

Dover, Del.

As health education occupies a very prominent place in the public health program, we think the school is the logical place to do a good deal of the work. Indeed, the work begins with the prospective (pre-school) school child. In the spring the child that is to begin

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school in September is given a physical examination in order that defects found may be called to the attention of the parents. This is for the purpose of giving parents an opportunity to have corrections made, so that the child may enter school in the best possible physical condition, instead of being handicapped from the beginning.

When defects are found, they are called to the attention of the parents, and they are advised to see their family physician, dentist, or oculist about them. The nurses and oral hygienists make visits to the parents of children who have defects and urge them to have corrections made.

Immediately after the opening of school in September all schools taking part in inter-scholastic athletics are visited and candidates for teams are given a physical examination, special attention being paid to heart, lungs and tonsils. This is done early in order that children with serious defects may be prevented from taking part in strenuous forms of athletics, and that these defects may be called to the attention of their physician and many of them may be corrected promptly.

After the opening of school in September the first, fourth and seventh grades are given a physical examination which includes examination of teeth, tonsils, heart, lungs, skin and scalp, testing of vision and hearing, weighing and measuring.

All other grades up to and including the sixth are inspected by a nurse and their teeth examined by a dental hygienist each year. Defects found are reported to the parents with the advice that they see their physician, oculist, or dentist to have corrections made.

The diphtheria immunization program is carried on annually in every school, special attention being paid to the immunization of the pre-school child (6 months or over), with the result that on January 1, 1936, we had records of the immunization of 46 per cent of the children in Kent County under 5 years of age. This immunization of pre-school children is apparently lowering the incidence of diphtheria very greatly in the state.

From the beginning of the diphtheria immunization in Delaware in 1926 parents were invited to bring pre-school children to the

schools for immunization, but few responded. with the result that, despite the fact that we had immunized more than 75 per cent of the school children, the morbidity rate was very little changed. Since 1932 we have insisted on the immunization of the child from six months to five years, and as the number of immunizations in this group has increased, to this time, our morbidity has diminished.

There is complete co-operation between the Education Department and the Health Department in the control of communicable diseases. Suspicious cases are reported to the county health units and prompt investigation and exclusion from school aid largely in prevention and control of epidemics, and improve the attendance records.

We feel that physical examination of pre-school and school children is very important.

It is very unfortunate for a child to begin school with defects, such as poor vision and infected tonsils, which handicap it to such an extent that it cannot possibly keep pace with normal children. The result is that the child frequently develops an inferiority complex which may never be overcome.

We feel that the function of our department in this work is to find abnormalities and call the attention of the family physician, oculist or dentist to them. The fact that we report them does not necessarily mean that we think they require immediate attention. Our work necessarily has to be done rather hurriedly and often under conditions not conducive to accurate diagnosis, so we report conditions to the physician for further study. For example, we report all heart murmurs and irregularities without attempting to determine their cause or significance.

WHAT THE PUBLIC WORKS PROGRAM HAS MEANT TO DELAWARE

R. C. BECKETT, B. S.*

Dover, Del.

The summer of 1936 represents an important milestone in the progress of sanitation in this state. Under the Public Works program, fostered by the Federal Government, a considerable amount of sanitary work has

been accomplished, notably in the installation of sanitary sewerage systems in several of the towns in this state, where three or four years ago this looked to be somewhat in the future.

The first two towns to come under the Federal program of the 30 per cent grant were Harrington and Elsmere. Harrington's sewerage system comprises a complete layout and, in addition, primary sedimentation and chlorination for the treatment of the sewage. Elsmere, which constructed its sewerage system at about the same time, has not been able to utilize its system until the past week. This holdup, which has been very embarrassing to the town officials, was occasioned by their acceding to the writer's suggestion that, instead of constructing two separate sewage treatment plants, they combine their forces with the Levy Court of New Castle County and construct an interceptor sewer to carry their wastes from Elsmere to the sewage treatment plant located at Richardson Park which was designed to take care of this whole valley. After considerable difficulty in rock excavation, this interceptor has now been built, and Elsmere will be able to utilize their new sewerage system. The property owners will pay a small annual fee for the use of the interceptor, but the town officials will not now have the worries of two small sewage treatment plants.

The city of Dover has recently put in operation a unique sewage treatment plant and incinerator. There are only a few of these installed in the United States, and Dover happens to be one of them. At the same time that the combined incinerator and sewage treatment plant was constructed, an interceptor sewer was constructed to take the wastes out of St. Jones Creek, and to bring them to one central point, and thence to be pumped to the new sewage treatment plant. The sewage treatment plant at Dover consists of a pumping station, primary settling tanks, sludge digestion tanks and chlorination, with the chlorinated effluent discharging into St. Jones Creek. The type of settling tank is one which has mechanically operated scrapers which scrape the settled sludge along the bottom of the tank to a sump whence the deposited solids are picked up by pumps and

*Sanitary Engineer, Delaware State Board of Health.

discharged into the sludge digestion tank. By this method the supernatant liquid is kept fresher and not contaminated by decomposing solids as is the case in the older type of tanks. The sludge in the sludge digestion tank undergoes decomposition, giving off certain gases, including methane, and these gases will be collected under a special floating cover and be used to heat the incinerator building, as well as to heat the recirculating water which is sent through coils in the sludge digestion tank, in order to raise the temperature of the sludge so that the production of gas will be greater. In time, if the production of gas warrants it, it may be possible to use this gas to assist in the burning of the refuse. The whole layout, consisting of the incinerator and sewage treatment plant, is a very neat substantial brick structure situated below the state capitol and in harmony with structures of similar materials. Landscaping will be added to it, and it will all present a very neat appearance.

In Georgetown, a complete new sewerage system has been installed and placed into operation the latter part of July. This is a sewerage system consisting of several pumping stations which were necessary due to the flatness of the Georgetown area, and a sewage treatment plant which consists of separate sludge digestion tanks and chlorination, somewhat similar to the Dover plant.

The sewerage system for Rehoboth is practically completed and the sewage treatment plant provided is primary sedimentation plus chlorination, with the chlorinated effluent going into the canal. Several pumping stations were also required here, on account of the general flatness of the topography at Rehoboth.

In addition to the sewerage systems constructed in these incorporated towns, a considerable amount of work is being done by the Levy Court in the Richardson Park area, Brack-Ex, Hillcrest, and Bellefonte. Further, additional work is being done along the Brandywine Creek, to lessen further the load of pollution going into this stream.

These improvements, namely, adequate sanitary sewerage facilities, have been made available to some 15,000 people. At the

present time, all towns above 1,000 population in this state will have partial or complete sewerage systems. We are now reaching in this state, so far as the small incorporated towns are concerned, the stage where additional sewerage systems are going to be difficult to foster. Realizing, however, that the protection of the inhabitants of the smaller communities is as important as it is in the larger communities, the State Board of Health has continued its advocacy of the community sanitation program inaugurated under the CWA, and now continued under the WPA. The community sanitation project, under the WPA, had its start in New Castle, and work is now being done in Middletown and Townsend. By the middle of August the town of Townsend will be completely sanitated, and by the first of September the town of Middletown. The next step will be to move these labor units to Newark, and then possibly to Newport.

Under this program, the property owner pays for the cost of materials and the WPA forces, under the supervision of Mr. Glyn Newton, is constructing sanitary privies which include concrete floor and riser, ventilator and painted building. These are installed on the properties free of charge, pits dug and curbed with wood, and the privies located. At the same time, the old structure is removed and the property cleaned up. In addition to the work done in these communities, sanitary privies have been installed at service stations, canneries, camps, dairies and schools. In New Castle County, where this project is now operating, all the one and two-room schools, through the courtesy of the State Board of Education supplying the funds, have been sanitized. It is hoped that the Works Progress Administration will grant to the State Board of Health similar projects for Kent and Sussex Counties and that this work will be started this fall in these two counties.

Summing up, the State Board of Health feels itself fortunate to have added the above communities to the list of those which have sewerage systems. The immediate problem now is to foster those programs which will provide sanitary facilities of a decent type for

the unsewered areas in many of our small incorporated towns.

When that program is finished, then will come the sanitating of the rural home, a problem of considerable magnitude because of the fact that such properties are quite widely separated, and the urgency of such protection not so self-evident to the property owners.

LABORATORY COMMENTS

ROWLAND D. HERDMAN, B. S.*

Dover, Del.

The activities of the bacteriological laboratory of the State Board of Health are confined to (1) the examination of specimens in the control of communicable diseases, and (2) the examination of specimens of water, milk and other foods for the protection of the public against diseases transmitted in this manner.

For the benefit of the new physicians in this state, and those not familiar with the work of the laboratory, I will give an outline of some of the tests by which the laboratory is able to assist physicians in the diagnosis and control of communicable diseases. The laboratory of the State Board of Health is equipped to give physicians free laboratory help in the diagnosis of the diphtheria, Vincent's angina, tuberculosis, typhoid fever, paratyphoid fever, typhus fever, undulant fever, tularemia, syphilis, gonorrhea, rabies, malaria, meningitis, etc. It is also equipped to make dark-field examinations for treponema pallidum on serum submitted by mail in capillary tubes. Urine, water, mother's milk, and cow's milk are also examined.

Members of the medical profession throughout Delaware are free to call upon the laboratory for any of these services. Outfits for mailing specimens to the laboratory can be obtained at all times from our regular mailing case stations, the offices of the county health officers, or from this laboratory. These mailing cases comply with Federal postal regulations and are designed to provide the most satisfactory type of specimens for examination. They are expensive, and each physician is requested to order only a reasonable number and to take the proper care of

them, so that waste may be prevented. It would be greatly appreciated if each physician would return to this laboratory all old and unused mailing cases.

Since the laboratory has been in Dover, the number of specimens received and examined each year has increased markedly. The increase in the work done represents the difference between 5,182 (1925) and 26,576 (1936) specimens per year. Here are briefly the figures showing the growth year by year during the past 11 years.

The total number of specimens received and examined for the year ending June 30, 1935, was 24,913. While this is a decrease of 1,243 specimens over the previous year, there were 1,842 less milk samples received than during the previous year. The total number of diphtheria specimens received was only one-third as great as previous year. The total number of sputum and urinalyses samples received was also less. There was a decided increase in the number of the various other kinds of specimens received and examined.

For the year ending June 30, 1936, 26,576 specimens were examined. This is the largest number of specimens ever received and examined by this laboratory. The Wassermann work has increased. For the year ending June 30, 1935, 6,114 bloods were tested for syphilis, and for the fiscal year 1936, 6,423 specimens of blood were tested—an increase of 309. The largest number of Wassermann tests made in one day was 200. This year 1,343 water samples were tested to determine if the water was safe for drinking purposes. Last year the total number was 1,014. Specimens to be examined for gonorrea, and tuberculosis increased for the year 1936. Smears of pus examined for micrococcus gonorrea were 1,286, which is an increase of 540 specimens over the previous year. Sputa examined for tubercle bacilli numbered 941—an increase of 221 specimens. During the year 729 cultures were examined for diphtheria. This is an increase of 511 specimens over the previous year. A large number of these cultures were from contacts in CCC camps.

*Director of the Laboratory, Delaware State Board of Health.

OBJECTIVES OF PUBLIC HEALTH NURSING

KATHRYN TRENT, R. N.*

Dover, Del.

The public health nurse is the connecting link between the patient and the physician. To her very often comes the opportunity of making the first contact with a patient or family. This gives her the grave responsibility of persuading patients to see their family physicians so that health may be promoted and needless illness prevented.

The objectives of the Division of Public Health Nursing of the Delaware State Board of Health are, in general, as follows:

First, to develop a program of health education that will result in better individual and family health.

Second, to assist the family in adjusting social and economic conditions that affect health.

Third, to develop community interest in procuring adequate public health protection.

Fourth, to give assistance to all health programs developed for the welfare of the family and the community.

These objectives applied to special types of service are outlined below:

MATERNITY SERVICE

First, to see that all expectant mothers are provided with medical supervision during pregnancy.

Second, to instruct both father and mother in the needs of the expectant mother, and in infant care.

Third, to assist the mother in preparing for delivery.

Fourth, to teach the importance of post-partum care.

Fifth, to teach the importance of continuous supervision for the new-born baby.

INFANT AND PRE-SCHOOL SERVICE

First, to see that all babies are registered.

Second, to teach the importance of medical supervision and to assist in securing such supervision for those who cannot provide it.

Third, to instruct parents in the importance of proper feeding, and to supply them with literature on feeding and feeding problems.

*Director of Public Health Nursing, Delaware State Board of Health.

Fourth, to instruct parents in daily routine of the child stressing the importance of good habit training.

Fifth, to assist in the prevention of communicable disease through a program of immunization.

Sixth, to assist in securing the correction of defects.

SCHOOL SERVICE

First, to promote instruction of pupils and parents in healthy living.

Second, to promote good school hygiene; special emphasis is placed on heating, ventilation, water supply, lighting, seating, and on sanitation.

Third, to assist the physician in routine medical inspection of all school children.

Fourth, to assist in securing the correction of defects.

Fifth, to assist in securing examination and treatment of special health problems in the school child.

Sixth, to provide teachers with literature on health.

COMMUNICABLE DISEASE SERVICE

First, to assist in securing more complete reporting of communicable diseases.

Second, to assist in the prevention and spread of communicable diseases through instruction on isolation, quarantine, and immunization.

Third, to teach the importance of medical supervision in the care of a communicable disease.

Fourth, to teach the importance of nursing care during illness and convalescence, so that sequelae can be prevented.

Fifth, to teach the importance of good personal hygiene as a means of disease prevention.

TUBERCULOSIS SERVICE

First, to assist in case finding.

Second, to promote a program of early diagnosis.

Third, to assist in arranging medical supervision for all cases.

Fourth, to teach necessary care in the home.

Fifth, to teach the patient personal hygiene

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EDITORIAL

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CANCER CONTROL

In 1935 there were 285 deaths from cancer in this state. There was one death from cancer to each ten from all other causes. From the indications of the figures of the first half of the present year there will be over 300 deaths in 1936, the largest number ever recorded in the state. At this time there are probably over half a thousand individuals in Delaware who have the disease in some of its stages.

Many persons say that nothing can be done to prevent this, at least at the present time, and that we must wait for additional information or for more scientific data before anything can be done to lessen the growing toll. One wonders if these persons are the descendants of those who thought that tuberculosis was unattackable or that a high infant mortality was a disguised evolutionary blessing.

Under any circumstances, it seems quite apparent that in Delaware there has not yet developed the idea that the situation is other than a normal one. *Laissez faire* seems to be quite the order of the day. He is indeed an optimistic individual who expects that, as a result of any preventive work which is being carried on at present, there are grounds justifying the hope that the increase so apparent over a period of years will shortly be halted.

In the final analysis, the control of cancer is a medical problem. The cancer cell is the thing to be attacked. Its growth must be prevented, inhibited, or it must be removed. There is only one person, the trained medical man, who can do that. There is only one place, the properly equipped hospital, where treatment must be secured. The increase in cancer means that treatment facilities are not keeping pace with those conditions which encourage cancer prevalence. The ability or the readiness of the medical man to do his share cannot be questioned. But he, the medical man, is the man on the firing line, and he must be given full latitude in the selection of the conditions under which he shall work.

This by no means is the equivalent of saying that there are not other needs for which a well rounded program of cancer control must make provision. Research may uncover many essential facts. It may eventually unbare the whole secret of cancer causation. It may indicate lines of treatment far surpassing in effectiveness any yet known. Few persons will say that treatment methods have not improved of recent years. Still fewer will say that we have reached an impasse and that treatment cannot be still more improved. Research is the key which, if the door of control is ever to be unlocked, must open it.

Publicity, too, is of value. There are many facts which must be brought home to the general population before much improvement can be expected. Is it yet thoroughly understood that there is a period when cancer is a local disorder? If it is not, then the warnings for early treatment are yet falling on heedless ears. The public must be informed, too, that

it has responsibilities in connection with the support of the efforts of those immediately engaged in the fight. Hospitals must be added too; clinics must be maintained. Only adequate publicity can bring home to the public these responsibilities.

The welding together in one organization in Delaware of individuals or groups interested in cancer treatment, in cancer research or in publicity of the salient points of the whole problem should not be a task presenting insuperable difficulties. Any other approach, any attempt which does not cover the entire field can meet with but a modified success. The state of Delaware might easily lead the way in such a co-ordinated effort of cancer control.

OBJECTIVES OF PUBLIC HEALTH NURSING

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with emphasis on the importance of preventing infection to others.

Sixth, to assist in securing institutional care whenever possible.

Seventh, to follow up and supervise cases released from sanatorium care.

Eighth, to keep all contacts under constant supervision giving them instruction in personal hygiene.

Ninth, to assist in securing reporting of all cases of tuberculosis.

SYPHILIS AND GONORRHEA

First, to assist in finding cases of syphilis and gonorrhea.

Second, to promote and to assist in providing medical treatment and follow-up care.

Third, to find all contacts and to secure medical examination for them.

Fourth, to instruct case in personal hygiene with special emphasis on prevention of infection to others.

DENTAL CARIES—A PROBLEM IN HEALTH EDUCATION

MARGARET H. JEFFREYS, *

Dover, Del.

Dental caries, in so far as humanity is concerned, is almost universal in its distribution. It affects all classes of civilization and there are few living today who have not experi-

enced its ravages at some period during their lives.

The period of childhood and adolescence would seem to be the one of greatest susceptibility—therefore of vital importance. Reports from the White House Conference show it to be the most prevalent of all diseases among children.

Careful study has revealed the fact that dental caries with its attendant neglected conditions, including diseased conditions of the gums and lack of sanitation are primary causes of mental backwardness and malnutrition in addition to various other illnesses. Varying as to type, many do not manifest themselves until middle age and then may directly involve heart, kidneys and joints. Does it not seem possible that these and other serious ills may be prevented by correcting the conditions which cause them?

This is why prevention in childhood is so important; why our public schools that represent almost every home are the most fruitful field for this service. There is an old saying, taken from the Bible—"Train a child in the way he should go and when he is old, he will not depart therefrom." Children in our schools begin their training early and are fitted for every status of life. Why neglect that important factor on which life depends—health?

Science has proved that the combination of faulty nutrition and unsanitary mouth conditions is the underlying cause of dental decay. With proper pre-natal and post-natal care, followed by early instruction in childhood, much may be done to arrest this disease. Prevention is a matter of education rather than therapeutic or operative procedure and includes not only the education of the children but the parents. It is true that little may be done to prevent future trouble for our adult population, but they may be made to see the advantages of having proper dental care for their children.

The neglect of the deciduous teeth has been our greatest problem. Too long have the people believed that they are unimportant; that they will naturally drop out and that there will be time enough for care when the second teeth are in their proper places. Surely we

*Director of Oral Hygiene, Delaware State Board of Health.

have but to look upon the hopeless dental cripples of manhood and womanhood today to realize the falsity of this theory; men and women with profiles badly distorted due to pre-mature extraction as well as teeth that were permitted to remain in place so long—teeth that did not naturally "drop out." Brilliant careers have been shattered by just such conditions. Can we as a race of intellectual human beings permit this to continue now that we know the answer?

It is not the child with the toothache who is our greatest concern though that is pitiable enough when we know that in many cases it could have been prevented. But it is the child who is listless, dilatory, and generally uninterested in work or play; the child who is no help to himself and frequently a detriment to his teacher and his companions. Though not true in every case, many may be attributed to the conditions just mentioned. I can well recall Dr. Willis Sutton, superintendent of schools in Atlanta, Georgia, relating at an educational meeting some years ago, the story of one of his most incorrigible students. The boy was about to be expelled from school and Dr. Sutton, having heard the grievances of his teachers, called the child to his office. He talked to him for some time and during the conversation noted the condition of his mouth and immediately decided upon an experiment. He encouraged the teachers to give the boy another trial and in the meantime took him to his own dentist, where he received the best care. Almost immediately a change was noted: self-pride and application to his studies; respect for his teachers and classmates. He soon became a credit to his school where otherwise he might have joined the other group now incubent upon the state.

In Delaware, we strive to keep up our attendance in school. Absence from school day after day for the various reasons and many of them toothache and poor health is responsible for failures, the cost of which is very great. Bridgeport, Connecticut, from 1914 to 1919 saved many thousands of dollars that may have been spent in this way. Instead they provided dental service for their children which netted them greater returns in healthier children and less absentees. It has been said

that during the influenza epidemic of 1918 when the greater majority of the schools were closed, Bridgeport was able to keep theirs open because the people had sufficient confidence in the physical ability of the individual to resist disease and this was to a great extent determined by the condition of the mouths of the children in the first grades who had had dental health education over a period of years and who had in turn carried the influenza into their own homes.

A district in Pennsylvania reported in four years a minimum number of communicable diseases in their schools. As in Bridgeport these children had had a dental hygiene service and in addition, the periodic care by their own dentist for a period of years. It was felt by those in charge that these children, through sanitary mouth conditions, had rendered themselves less susceptible to disease.

Here we are following the same plans, however, with a lesser degree of satisfaction. With a most inadequate staff we are examining the teeth of almost every child in the state each year and notifying the parents when care is required. Home visits are made when the case is most urgent and an attempt has been made to educate the parents through Parent-Teacher Association meetings, etc. We have at stated times made use of the radio as an ethical attempt at education. The cleaning of the teeth of the children in the first three grades for the dual purpose of stimulating the desire for mouth cleanliness and as an object of visualization to the parents as to what may be successfully done for their child. While these and many other methods have been used successfully, the results obtained thus far are but a scratch upon the surface.

A long time will be required before we see much improvement in the mouths of the children who are coming into our first grades; a long period during which the public must be educated so that these children will have through the first years of their lives, the types of food that are conducive to the building of strong teeth and healthy gums and the type of home supervision that will keep them in good condition. With this cycle completed, dental caries will be written as history and the children of this state will be come citizens of whom the community may well be proud.

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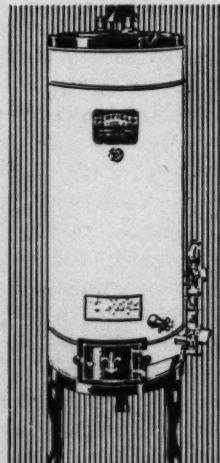
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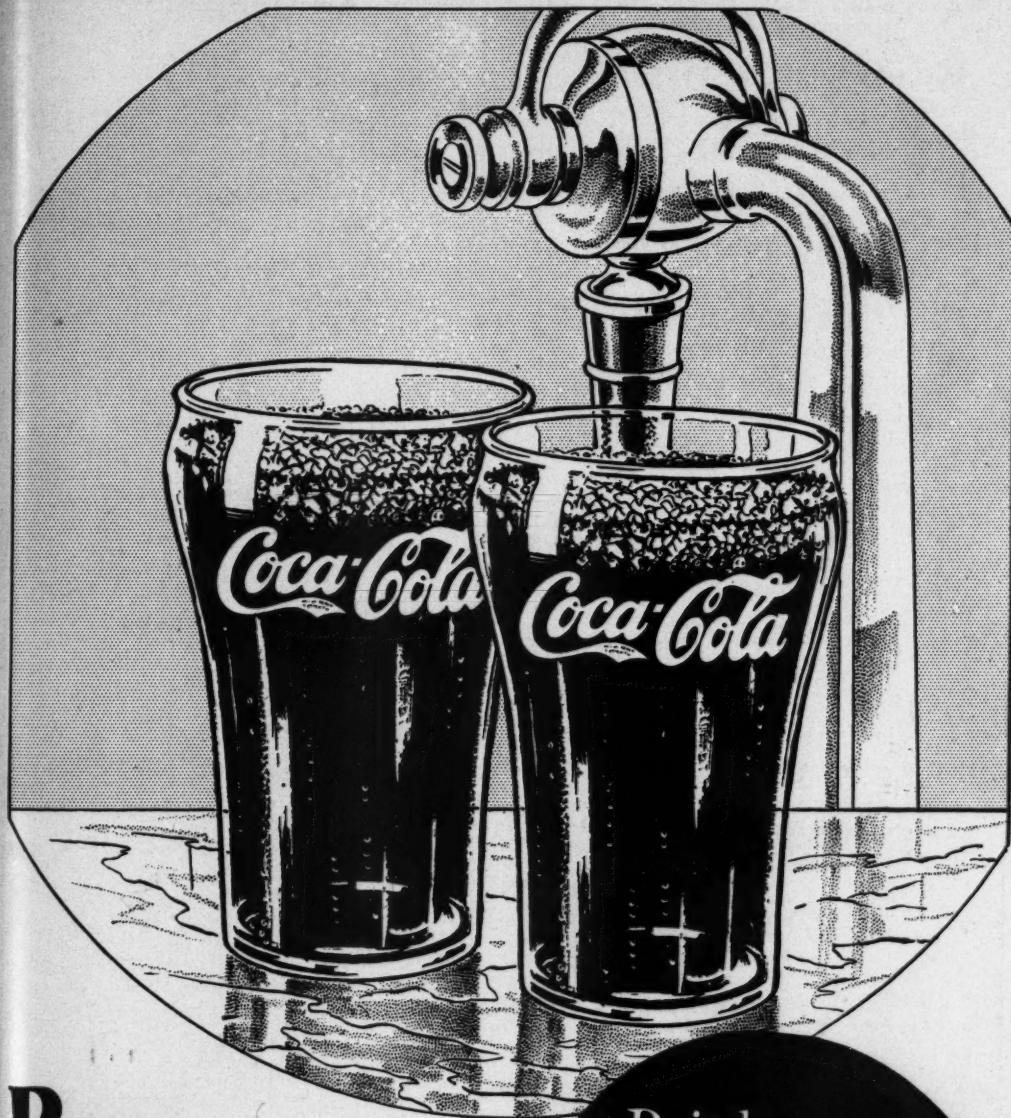
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